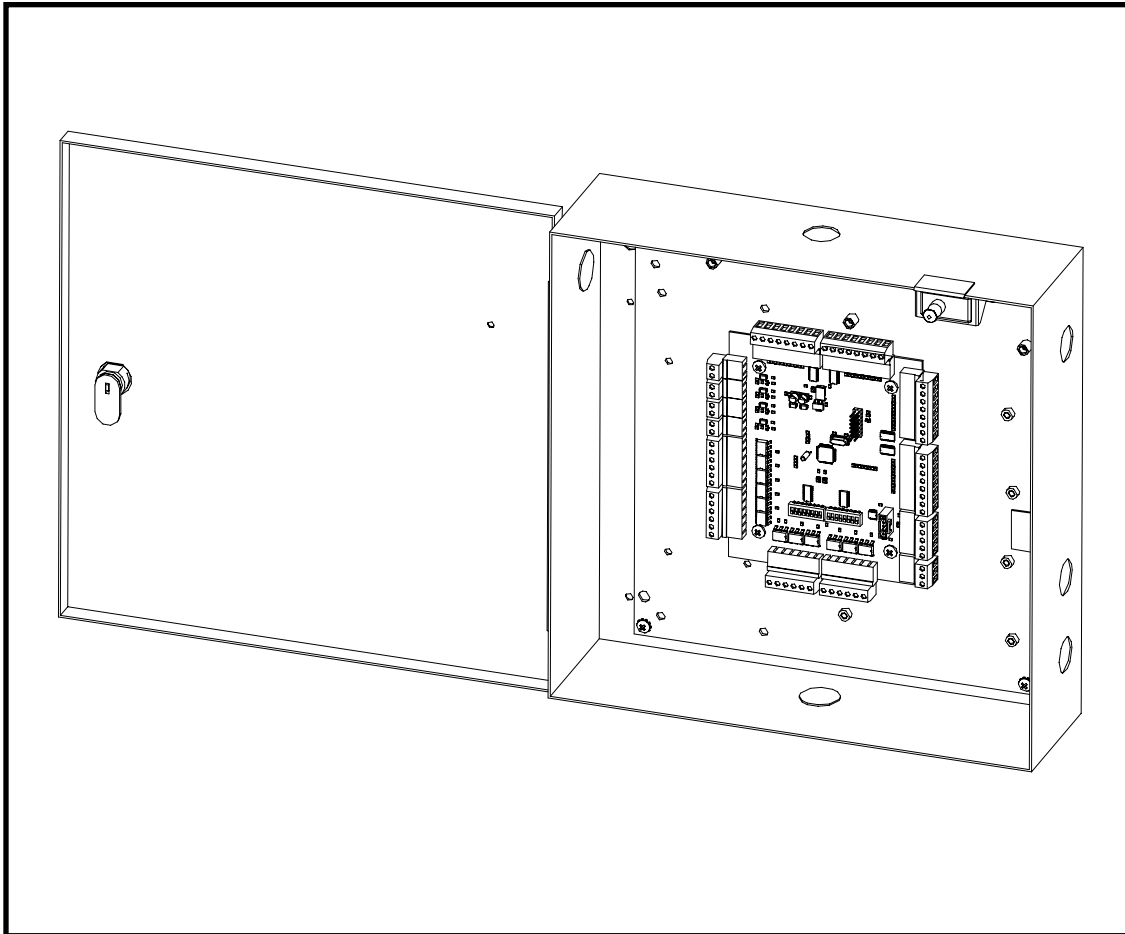




# PANEL INTERFACE BOARD (PIB) FOR VIP OPEN ARCHITECTURE LOCKS

## INSTALLATION MANUAL



## PANEL INTERFACE BOARD (PIB) - Installation Instructions

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The Schlage Panel Interface Board (PIB) is a four door input/output interface to connect from one to four Schlage VIP locks and/or exit device trims to a third party access control panel. Wiring from the locks to the PIB forms an RS485 network which provides two-way communication. The locks transmit card/fob data, door status, request to exit, and use of mechanical key or latch bolt monitoring ('Spare' on the PIB) to the panel. The panel controls the locks using its own software and output relays. The PIB is located near the panel so the normally large number of wires only run the short distance between the panel and the PIB. The wiring out to the locks is greatly simplified, reducing cost and complexity.

The wiring of the locks requires only two pairs - one twisted, shielded data line and one pair for power. The data lines should be daisy-chained. Power supplies can be located at or near the PIB for short wire runs or local to the locks if they are located far from the panel.

The PIB features removable heavy duty terminal blocks, dip switches for system configuration, and LEDs for status and error indication. Wiring the PIB to the panel is done as if the PIB is the card reader, the lock, the door status switch and the request to exit device - so it is very conventional for the experienced installer.

Some important points to consider when installing a VIP system:

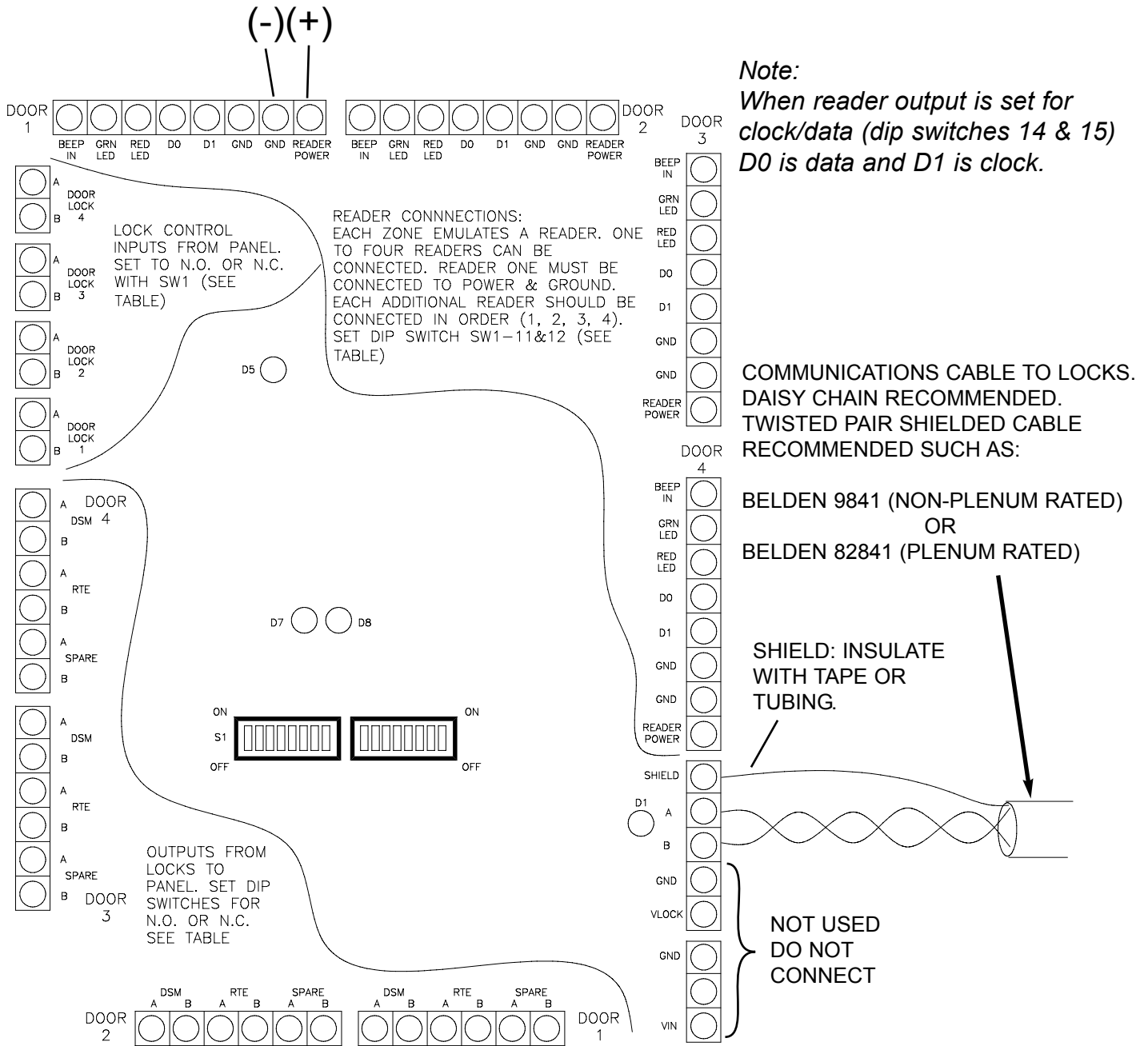
- 1. Read all documentation for all products in the installation.*
- 2. Power wire(for locks) must be appropriately sized for the distance and voltage to ensure that adequate voltage exists at the lock.*
- 3. Communications wire should be suitable for use on RS485 type networks.*

**This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

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Make wiring connections from the PIB to the panel and from the PIB to the lock. Note that readers, lock control zones and door output zones must be used from lowest to highest number. (For example, if only three locks are used do not use zone 4.)

**POWER INPUT FOR PIB**  
**6-12 VDC 100mA REQUIRED.**  
**DO NOT APPLY 24 VOLTS TO THESE TERMINALS.**



**Note:**  
 When reader output is set for clock/data (dip switches 14 & 15) D0 is data and D1 is clock.

COMMUNICATIONS CABLE TO LOCKS. DAISY CHAIN RECOMMENDED. TWISTED PAIR SHIELDED CABLE RECOMMENDED SUCH AS:  
 BELDEN 9841 (NON-PLENUM RATED)  
 OR  
 BELDEN 82841 (PLENUM RATED)

SHIELD: INSULATE WITH TAPE OR TUBING.

NOT USED  
 DO NOT  
 CONNECT

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### DIPSWITCH NUMBER

**NOTE: ALL DIP SWITCHES ARE SET TO OFF FROM THE FACTORY.**

- 1    OFF= TWO-LINE LED CONTROL OF LOCK LED INDICATION  
      ON=SINGLE-LINE LED CONTROL OF LOCK LED INDICATION (**SEE CHART ON NEXT PAGE**)
  
- 2    OFF=LED STANDARD - (ACTIVE LOW SIGNAL FROM ACCESS CONTROL PANEL. SEE CHART ON NEXT PAGE.)  
      ON=LED INVERT - (ACTIVE HIGH SIGNAL FROM ACCESS CONTROL PANEL. **SEE CHART ON NEXT PAGE.**)
  
- 3    OFF=LED STYLE STD. (FOR USE ON TWO LED SYSTEM. **SEE CHART ON NEXT PAGE.**)  
      ON=SPECIAL CASE. IF PANEL TRIES TO LIGHT BOTH LEDS (AT THE SAME TIME) NEITHER OF THEM LIGHTS.  
      BEEPER IS NOT CONTROLLED BY PANEL WITH THIS SWITCH ON. S1-1 MUST BE SET TO OFF WHEN THIS SWITCH  
      IS SET TO ON. **SEE CHART ON NEXT PAGE.**
  
- 4    OFF=NORMALLY OPEN LOCK CONTROL FROM PANEL  
      ON=NORMALLY CLOSED LOCK CONTROL FROM PANEL
  
- 5    OFF=BEEP STANDARD (ACTIVE LOW SIGNAL FROM ACCESS CONTROL PANEL)  
      ON=BEEP INVERTED (ACTIVE HIGH SIGNAL FROM ACCESS CONTROL PANEL)
  
- 6    OFF=NORMALLY OPEN DOOR STATUS OUTPUT (WHEN DOOR CLOSED)  
      ON=NORMALLY CLOSED DOOR STATUS OUTPUT (WHEN DOOR CLOSED)
  
- 7    OFF=NORMALLY OPEN RTE OUTPUT WHEN LEVER NOT DEPRESSED  
      ON=NORMALLY CLOSED RTE OUTPUT WHEN LEVER NOT DEPRESSED
  
- 8    OFF=NORMALLY OPEN SPARE OUTPUT (NORMAL = KEY NOT USED/LATCH EXTENDED, LOCKED POSITION)  
      ON=NORMALLY CLOSED SPARE OUTPUT (NORMAL = KEY NOT USED/LATCH EXTENDED, LOCKED POSITION)
  
- 9    OFF=SPARE OUTPUT PROVIDES STATUS OF KEY USE (RTA) - IF LOCK IS EQUIPPED W/ OPTION  
      ON=SPARE OUTPUT PROVIDES STATUS OF LATCH BOLT MONITOR (LBM) - IF LOCK IS EQUIPPED W/ OPTION
  
- 10   OFF=SPARE OUTPUT DOES NOT PROVIDE TROUBLES STATUS. SELECTION ON 9 IS USED.  
      ON=SPARE OUTPUT PROVIDES TROUBLES STATUS. SELECTION ON 9 IS IGNORED.

### SET NUMBER OF LOCKS

	1 LOCK	2 LOCKS	3 LOCKS	4 LOCKS
11	OFF	ON	OFF	ON
12	OFF	OFF	ON	ON
13	MUST BE SET TO OFF			

### SET OUTPUT TYPE

	PROX (WIEGAND)	CLOCK/DATA (MAG STRIPE)
14	ON	OFF
15	ON	ON
16	MUST BE SET TO OFF	

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### SETTING THE LED CONTROL SCHEME:

The VIP locks have two LEDs - one red and one green. They do not have an amber LED. Both one-wire and two-wire LED control is supported by the VIP system. Please review the LED control settings available in the panel documentation. Based on the requirements of the access control panel, and perhaps on the behavior of other readers which may already be installed, determine the best type of control method for the lock(s) and set it using dip switches 1-3 as shown below:

SW1:	SW2	SW3:	FUNCTION:
ON	OFF	OFF	<b>SINGLE LINE CONTROL BY RED LED INPUT ONLY (GREEN INPUT DOES NOTHING)</b>  RED INPUT HI - GREEN=OFF; RED=ON RED INPUT LOW - GREEN=ON; RED=OFF
ON	ON	OFF	
OFF	OFF	OFF	<b>TWO LINE CONTROL BY RED &amp; GREEN LED INPUTS</b>  RED INPUT HI: RED=OFF RED INPUT LOW: RED=ON GREEN INPUT HI: GREEN=OFF GREEN INPUT LOW: GREEN=ON
OFF	ON	OFF	
OFF	OFF	ON	<b>TWO LINE CONTROL BY RED &amp; GREEN LED INPUTS WHERE ACTIVATING BOTH TURNS BOTH LEDS OFF. MOST COMMONLY USED FOR CASES WHERE OTHER READERS IN THE SYSTEM HAVE AN AMBER LED (I.E. BOTH LEDS ON) CONDITION.</b> <b>IMPORTANT: SW1-1 MUST BE SET OFF.</b> <b>IN THIS SETTING THE BEEPER WILL NOT BE CONTROLLED BY THE PANEL. THE BEEPER WILL SOUND ONCE EACH TIME THERE IS A VALID RELEASE INPUT FROM THE PANEL TO THE PIB AND THE LOCK UNLOCKS.</b>  RED INPUT HI: RED=OFF RED INPUT LOW: RED=ON (IF GREEN NOT ALSO ACTIVATED) GREEN INPUT HI: GREEN=OFF GREEN INPUT LOW: GREEN=ON (IF RED NOT ALSO ACTIVATED)
OFF	ON	ON	
ON	ON	ON	CONFIGURATION NOT USED.
ON	OFF	ON	CONFIGURATION NOT USED.

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### ANTI-TAMPER SWITCH OPTION:

When furnished with the anti tamper switch option (ATS) the switch will change state when the lid to the enclosure is opened. The intended use is to signal the access control system that a tamper event is occurring. In order to reliably press the switch down it is necessary to lock the lid with the KLC option or screw it shut with sheet metal screws (not provided). When the switch is not depressed (lid not closed) the wire colors are as follows:

C. BROWN

N.O. BROWN

N.C. NONE (WIRE CAN BE MOVED OR ADDED FOR THIS FUNCTION)

The switch contacts are rated 0.1 amps @125VAC

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### TROUBLE CODE/STATUS INDICATIONS:

The PIB has the following outputs to indicate system status:

**D1** Steady green means power is applied on the lower right corner of the board. (Power should not be applied there.)

**D5** Steady green means power is applied to the PIB through reader power input 1. Normal.

**D8** Normally blinking steadily 16 times per second. If an "OFF" period is noticed, check the settings of the dip switches 11 & 12 on the PIB for the correct number of locks in the system and the locks to be certain that no two locks have the same address and the addresses are in sequence starting with address 1.

**D7** Provides trouble code output as follows:

- One RED blink (one second long) every ten seconds: a lock has gone off-line. Possibly the wire is broken or disconnected, data A and data B wires are crossed, or some other failure has occurred (loss of power to lock, etc.)
- Two RED blinks (one second long) every ten seconds: lock reader to lock PC board communication failure. DSM and REX (RTE) functions still work but no card or key use available. Possibly the lock will have failed locked or unlocked (FSE/FSA respectively). Check to be sure proper connections have been made during lock installation.
- Three RED blinks (one second long) every ten seconds: indicates bad level of noise on the communication lines. Be sure that all data A lines are connected only to other data A lines and that data B lines are only connected to to other data B lines. Be sure that lock addresses are set correctly too. Check and modify shielding connections if required.

*Note 1:* When dip switch #10 is set to ON, all of the above error codes designated by the RED blinks are interpreted as troubles and will be outputted to the spare output for each of the available ports depending on the number of locks. Example settings: DIP #8 ON, N/C spare, DIP #9 is ignored, DIP #10 ON, and DIPs #11 and #12 are set to OFF (1 lock setup) = spare output will go HIGH when in trouble on DOOR #1 of the PIB.

*Note 2:* If more than one condition outlined above occurs at the same time, only the lowest number (highest priority) will be indicated. As each condition is cleared, the next highest priority error will be indicated. When no error condition is present, D7 will not be lit.

# NOTES

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